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Jesus Wouldn't Mow, He'd Grow: Transforming congregations, lawns, and food security in Linn County, IA

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Abstract

This study looks at religious organizations, lawns, and food insecurity in Linn County, and seeks to evaluate a hypothesis set forth by the founder of a farming nonprofit in the county. The Kendrick Hypothesis states that Linn County congregations could grow enough food on their lawns to eliminate food insecurity in the region. The study assesses this hypothesis using a yield analysis and survey of local religious leaders. While the study found that full participation in a congregation garden program could produce enough yield to significantly impact the county's food insecurity, the results do not support the Kendrick Hypothesis. The results of the religious leader survey suggest the unlikelihood of achieving the impact calculated in the yield analysis, it still shows that enough interest exists to make the program successful enough to improve local residents' access to food.

Executive Summary

This project evolved out of a memorable conversation I had while I was serving a term with AmeriCorps National Civilian Community Corps. I was picking corn in Linn County, IA during a hot day in August for a nonprofit called Feed Iowa First. Sonia Kendrick, the organization's founder, spoke to the group during our lunch break. She discussed her experience as a veteran, the inspiration behind the nonprofit, and the projects she'd like to accomplish. Amidst enthusiastically discussing her many ideas, Kendrick mentioned a phrase that perked my ears: "Jesus Wouldn't Mow. He'd Grow." It was her slogan for a program that would replace religious organization lawns with gardens. This initiative resembled the organization's other projects. The field of sweet corn we were harvesting covered what used to be a corporation's lawn.

Kendrick asserted that converting the lawns of all Linn County's religious organizations would harvest enough produce to eliminate food insecurity in the county. This is the Kendrick Hypothesis.

Food insecurity itself is a difficult concept to evaluate. The United States Department of Agriculture (USDA) measures food insecurity on a household level, and defines it as "limited or uncertain access to adequate food." This is distinct from hunger, which is the physiological condition that results from having inadequate access to food. Most food insecurity estimates rely on indices of socioeconomic demographics (like poverty, percent of minorities) and qualitative survey questions about food access. Financial strain and geographic isolation from food sources (such as food deserts) can both cause a household to experience food insecurity.

Food insecurity is an issue of limited access to food, rather than limited food sources. The introduction of high performing fertilizers, pesticides, and seeds in the 20th century have

increased farm yields to the point where the country is producing enough food. Food insecure households just cannot access it. While the creation of a congregation garden program would in no way solve food insecurity, increasing areas of local food production could improve access for food insecurity residents.

It is difficult to validate the Kendrick Hypothesis because it relies on so many factors. Feed Iowa First could establish a successful congregation garden program in Linn County without improving food security. It could even improve food security without eliminating it. Even if food security drastically improved in the county, it would be impossible to determine whether the congregation garden program caused this improvement. This study offers a very basic evaluation of the hypothesis, with many assumptions about program participation and influence.

The study primarily assesses the Kendrick Hypothesis in terms of yield. It seeks to determine whether, in ideal conditions, congregation gardens could grow enough produce to compensate for the food security gap. The study measures yield by weight (the total tons of food produced) and yield by value (the grocery value of the food produced). The compares these measures to the recommended produce intake outlined in the USDA's 2006 *Thrifty Food Plan* and the financing gap identified in Feeding America's *Map the Meal Gap* project.

This basic assessment assumes ideal conditions for the program. It does not consider logistical issues, such as who will manage the gardens, how the produce will be processed, or how the target demographic of food insecure individuals will access the products. It also makes a number of assumptions. First, it assumes that all 199 religious organizations in Linn County, IA agree to donate the entirety of their lawns the program. It also assumes that the congregation gardens include crops with similar yield rates to the sample selections. Finally, possibly most

significantly, it assumes that all the harvested produce actually improves residents' food security. The assessment purely seeks to determine whether the program could produce enough food.

Since this yield assessment includes so many assumptions, the study also conducted a survey of 52 Linn County religious leaders. The survey intends to contextualize the yield assessment's assumptions in the reality of the county's religious leaders. The survey inquired about the congregations' interest in a congregation garden program, their willingness to participate, and the barriers to participation. It also asked about their experiences gardening at the congregation, and their experiences with food insecurity at the congregation.

Although the study's yield assessment found that congregation lawn gardens could produce enough food to make a significant impact on food security, the results did not support the Kendrick Hypothesis. Similarly, the results of the religious leader survey revealed a significant amount of interest in such a program, but they also highlight the optimistic nature of the assessment's results. While the program would not solve food insecurity in the county, it would still be a beneficial addition to the county's food assistance programs.

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Preface

Linn County is the second most populous county in Iowa with the state's second largest city, Cedar Rapids. Even so, the county seemed bucolic and the city, spacious and clean, in contrast to my hometown of New York City. I found myself frequenting Linn County during my 10-months of service with the North Central Region of AmeriCorps National Civilian Community Corps (NCCC), based out of the neighboring Benton County. With only a few months of service left, I volunteered to spend a day picking sweet corn in Cedar Rapids for Feed Iowa First, a nonprofit that works to combat food insecurity in Iowa. The organization not only grows produce on donated plots of land, but it also tries to increase the number of farms by providing resources and training to aspiring farmers. The founder, Sonia Kendrick, directed a small swarm of AmeriCorps NCCC corps members through her rows of sweet corn grown on land borrowed from a local company. All the corn harvested would be donated to local pantries and kitchens to help provide local residents with healthy food.

When we spoke during our lunch break, Kendrick suggested that Iowa should distribute more food locally. She argued that a state like Iowa, the 'bread basket' of the United States, should make sure it can feed its own residents before exporting its harvests. In a county already covered with agriculture, she identified lawns as the ideal source of land.

Driving through the Midwest, I was often struck by the checkerboard pattern of soybean and corn fields, only broken up by smatterings of pasture. While there's been significant discussion over the dominant, monoculture production of corn and soybeans, or the questionable use of corn for ethanol rather than food, it seems that the superfluity of lush grass lawns has gone relatively untouched. Yet, in 2005, researchers used satellite imagery to

determine which crop covers the most acres of land in the United States. They determined that corn is not America's primary grass crop. The researchers estimated that lawn actually takes up 40.5 million acres of land in the United States, more than four times the amount used for corn production, and almost eight times the amount used for soybeans (Lindsey, 2005). Beyond the issue of agricultural exports, this raises the question of whether it is appropriate to have lawns when so many people still experience food insecurity and hunger.

In Linn County, Kendrick specifically pointed to the lawns of religious organizations. She memorably asserted, "Jesus wouldn't mow, he'd grow." That was a catchy enough slogan to pique my interest. Kendrick continued to speculate that if all the religious organizations in the county were to replace lawns with donation gardens, that they could harvest enough produce to eliminate food insecurity in the region. This struck me as an interesting theory. Would they really be able to grow that much food? Although I was skeptical about the accuracy of such a claim, I decided to dedicate this project to evaluating Kendrick's hypothesis. In the study that follows, you'll read about my process, my results, and what I think it all means. I hope you find it informative, and that maybe it'll inspire you to do a similar study in your own community.

Acknowledgements

Thank you to Rick Welsh, my advisor. Thank you for meeting with me week after week, and for listening to me rant as I worked through all the kinks of this project. Also thank you for contributing to my stash of punny titles of this project. Although I didn't use Breaking Lawn or Mow Lawn More Problems, they've brought me great joy and much laughter. You've been so supportive and patient with me. I'll miss our regular meetings, but you should still expect me to drop in from time to time.

Thank you to Sonia Kendrick. Thank you for inspiring me to do this project with your amazing work through Feed Iowa First. I hope you find this study helpful, and I hope to return to Iowa one day to see bountiful harvests from your new gardens.

Thank you to Carol Dwyer for helping me write my survey and just generally being a great professor and influence on me during my time at Syraucse. Also thank you to all the religious leaders in Linn County, IA who participated in my survey, and made my project possible.

Thank you to my roommates, my friends, and my family for lending me your ears, and letting me go on about lawns, gardens, crop selections, and whatever it is I've chosen to rant about for the day.

Finally, thank you to Bill Coplin. You may not have participated in this project, but you once gave me the best piece of advice I've ever received. I think I've finally learned how to be a deer who eats one leaf at a time.

Advice to Future Honors Students

Write as you go. It'll feel nice to have things written that you can go back and rework, even if you end up scrapping it all. You many even find a gem and say "huh, I forgot I was going to include that."

Introduction

Linn County, IA is not the face of food insecurity. Feeding America estimated Iowa's 2014 food insecurity rate to be 12.4%, which places the state far below the national average of 15.4%. At 12.1%, Linn County's food insecurity rate is even lower (Gundersen, Satoh, Dewey, Kato, & Engelhard, 2016). Nevertheless, these statistics do not change the experiences of the estimated 26,080 Linn County residents who live with food insecurity (Gunderson et al., 2016). Feeding America calculated an average household shortfall of $16.82 per week for households across the country. Researchers with Feeding America estimated that an average meal in the county costs $2.74. Given this value, they determine that it would take approximately $12,613,000 of additional funding to achieve food security for all Linn County residents. This would be in addition to the $40 million that the county already spent on food program benefits for 2013 (Iowa Department of Human Services, 2016).

Although Linn County's food insecurity rate is below the state average, 2002 Iowa State University study on Iowan food insecurity found that suburban and urban food pantry clients experienced significantly more food insecurity than rural clients. The Iowa Food Security Report Card project in 2003 found similar results found that that nearly half of surveyed food pantry users in an urban setting visited a pantry four or more times during the past year, and a third of urban respondents visited a pantry at least seven times during the past year. Only five percent of suburban food pantry clients and 16% of urban food pantry clients reported being food secure (Greder, Garasky, & Morton, 2004, p. 46). Based on survey responses, the study also determined that more than half of both urban and suburban food pantry clients were food insecure with

hunger. As the second most populous county in Iowa with the state's second largest city, these are the types of demographics in Linn County.

In some ways, food insecurity is measured through perception. Surveys ask whether respondents feel they have access to food, and whether they run out of food. A study on Iowan food deserts found that rural areas with higher perceived civic structure were less likely to be food insecure (Morton, Bitto, Oakland, & Stand, 2005, p. 107). One in four residents of Linn County live in an area with low access to a grocery store (Economic Research Service, 2015). This means that people who felt they had access meal sites and food pantries were more likely to be food secure. Although most of the low food access areas in Linn County exist within and around Cedar Rapids, it could be that increasing perceived civic could also help increase food security in urban and suburban areas. According to the researchers for the Iowan food desert study, churches are key players in developing civic structure in rural areas (Morton et al., 2005, p. 107)

Although Iowa leads in food security rates, it falls in the bottom tier for fruit and vegetable consumption. In the Linn County results of the 2014 Iowa Youth Survey, 21% of the youth respondents reported eating vegetables less than once a day, and 16% reported eating fruit less than once a day (ICSARE, 2015, p. 19-20.) These rates are better than the results of a 2013 vegetable and fruit consumption study by the Centers for Disease Control and Prevention. This study found that 36% of Iowan adolescents ate fruit <1 time daily, and 35% eat vegetables <1 time daily. This drastic change could result from different survey tactics, or could offer evidence that Linn County is doing well. Even fewer adults 40% of Iowan adults reported consuming fruit <1 time daily, and 27% reported to consuming vegetables <1 time daily (CDC, 2013, p. 8).

The USDA's 2006 Thrifty Food Plan recommends adult males aged 19-52 purchase 14.05 pounds of fresh produce per week. Public and nonprofit organizations in Iowa are already working to increase the availability of fresh produce food pantries. Some food bank distributors, like the Food Bank of Iowa, already have fresh produce programs. The Food Bank of Iowa partners with outside gardeners, farmers, and organizations, like Iowa Gardening For Good, which donated over 18,000 pounds of produce in 2014 (Iowa Gardening for Good, 2015). The Food Bank of Iowa's flagship partnership has partnered with Newton Correctional Facility to grow fresh produce for distribution to the food bank's large network of food pantries. Last year, the program produced 80 tons of fresh produce on twelve acres of land (Iowa Food Systems Council, 2015 p. 7) According to the Food Bank of Iowa's website, the program grows: cabbage, carrots, green peppers, onions, potatoes, radishes, squash, sweet potatoes, watermelon, and zucchini. This selection of crops harvested in this program provide the basis of the second estimate for crop yield in this study. This second calculation estimates weight-yield and price-yield based on what kind of produce food pantries would want to receive. According to Susan DeBlieck of the Iowa State University (ISU) Extension and Outreach Master Gardener Program and Christine Hradek of ISU's SNAP-ed, such desirable crops store and transport well, can do without refrigeration, and are familiar to clients (DeBlieck & Hradek, 2015).

Hradek and DeBlieck have also been park of ISU's initiative to increase the amount of fresh produce in food pantries by encouraging the creation of donation gardens. As part of the donation garden initiative, ISU intends to devote its seven Demonstration Home Gardens to teaching home gardeners how to grow produce for food banks for the 2016 growing season. In

an interview with the Ames Tribune, Hradek emphasizes the necessity of creating more donation gardens to meet need (Erickson, 2015).

Although it may seem like gardens may make little difference in the breadbasket of America, a 1998 study of buying power at Stanford estimated that 85% of the food consumed by Iowans was imported (Tagtow & Roberts, 2011, p. 37). One cause of this could be the miniscule amount of Iowan farmland used for vegetables. According to the CDC's *State Indicator Report on Fruits and Vegetables*, only .1% of Iowan farmland is used for fruit and vegetable production (p. 9). In some areas like Linn County, the number of acres producing vegetables decreased from 1997-2012, which suggests the percent of food imported could be even higher today (National Agriculture Statistics Service)

Hawkeye Area Community Action Program (HACAP) is the equivalent of the Food Bank of Iowa that serves Linn and the surrounding counties. HACAP has also experienced limitations on its fresh produce supply. Out of the 2.7 million pounds of food HACAP distributed, only 9,000 pounds were fresh produce (IFAHWG, 2014, p. 3). Cultivate Iowa, an initiative from the Iowa Food System Council's Food Access & Health Work Group, advocates for improving access to fresh produce through home gardening and donating fresh produce. The organization encourages areas to 'foster coalitions and networks'. The first suggestion of how to accomplish this coalition is "establish partnerships between congregations and food pantries to grow food for low-resource Iowans" (IFAHWG, p. 5).

Religious organizations are central to civic structure and play a vital role in the private safety net for households experiencing food insecurity. Of the 35 meal sites and food pantries

identified in Linn County, IA, more than half were located in buildings owned by religious organizations.

This study looks at how the state could create more donation gardens and grow fruits and vegetables closer to food pantries. Although many refer to Americans as corn people, research suggests that lawns actually occupy three times as much land as corn (Bittman, 2013). This study suggests looking at lawns as potential sites for local, fresh sources of produce.

Food insecurity exists even the acclaimed breadbasket of the United States, Iowa. Despite large areas of land and significant civic structure, 12% of Iowans are still considered food insecure. The study considers yield rates and participatory feasibility to determine whether the 390 acres of lawn at the 199 qualifying religious institutions could grow enough food to eliminate food insecurity in the region. The researcher determined garden yield by looking at production rates for a sample of crops, and comparing their overall weight- and value-yields to the amount necessary to provide a sufficient food source for the 26,030 food insecure residents of Linn County. Since this assessment assumed that all the congregations would participate with their entire lawns, the study also tried to determine the willingness of local religious leaders to participate in such a program. The study assesses this by surveying religious leaders. The researched contacted the religious leaders at 136 congregations, and had 39% respond to a 20-question online survey. Although the results suggest that the lawns of religious organization would not be able to grow enough food to eliminate security, even with full participation, it would still make a significant impact.

Methods

Information Collection

The first step of this study required identifying all the religious organizations and the religiously-owned parcels in Linn County, IA. A religious organization is a congregation, and religiously-owned parcels are the plots of land that the congregations own. Given the small geographic area, the study initially intended to include all religiously-owned parcels. However, properties designated as a 'church' by the County Assessor often differed from those defined as 'religious' by County Recorder, and both of these sometimes diverged from properties considered religiously-affiliated by study's research. In response to such inconsistency, this study includes religious organization if there is proof the organization currently exists, if the organization offers religious/worship services, and if the organization independently owns or leases at least one parcel of land in Linn County.

Some of the criteria proved more straightforward than others. For example, the study excludes religiously-affiliated fraternal organizations like the Knights of Columbus and the Scottish Rite because they do not hold services. While it was easy to determine whether groups held religious services, determining active congregations proved much more difficult. Many of the county's records were outdated or inconsistent. Congregations would change their names, merge, or close, and result in inaccurate county records. Since many county departments contradicted each other, identifying active congregations required cross-referencing a variety of online sources, including: property records from the Linn County Assessor, tax records from the Linn Recorder, self-reporting databases (ex: churchfinder.com), search engines, and individual congregation websites. This issue impacted the survey aspect of the study far more than the yield

aspect. Although religious organizations changed names and leadership, they tended to use the same parcels already developed with religious buildings, like temples and chapels.

Research into the county's land records revealed that many religious organizations owned multiple parcels of land. Maps B1, B2, and B4 in the appendix show examples of the two types of parcels. Primary parcels, which contain the main religious structure, are labeled in orange. Secondary parcels, which had widely variant characteristics, are labeled in pink. Some secondary parcels were adjacent to primary parcels, and others they were isolated. These religiously-owned properties ranged from vacant lots to schools, private residences, and even businesses. Since the uses of these properties vary so significantly, the study includes the parcels in general assessments of church land, but does not consider them in lawn measurements or yield calculations. Although the lawns of secondary parcels are not included in this study, the secondary parcels still represent areas of land that could theoretically be converted into donation gardens.

The discovery of such miscellaneous religiously-owned property also inspired the incorporation of independent ownership into the qualification criteria. For example, this study includes religious organizations affiliated with primary and secondary schools, but omits those affiliated with colleges and universities. This distinction relates to the religious organization's control over its property. Since religious organizations affiliated with schools of higher education were generally situated on a campus, the grounds were not controlled by the religious leaders, but by the educational institution. In contrast, primary and secondary schools were generally owned by the affiliated religious institution, which suggests that the religious leaders and congregations would have more control over the grounds.

Using the established criteria, the study identified 199 qualifying religious institutions in Linn County, IA. This target demographic included 195 Christian churches of varying denominations, two Islamic temples, a Hindu temple, a Bahai center, and a Jewish temple. The researched implemented a similar process to identify food pantries and meal sites in Linn County, but the results primarily relied on a 2016 food assistance resource list from Linn County Social Services.

Geographic Representation

This study represents the qualifying religious parcels, food pantries, and other relevant information using two base maps: a polygon base from the Iowa GIS Data Repository, and a 2014 aerial imagery, raster base from the Linn County public server. The maps including in this report all use the aerial imagery because, unlike the polygon base, they establish a sense of the county's landscape. The combined use of polygon and raster maps was inspired by an online GIS map maintained by the GIS Division of Linn County, which can be accessed through the source link in the references.

The maps also include a polygon, land records data layer from the County Auditor, which provides the main source of parcel data. This layer included important parcel fields, such as the County Auditor's categorizations, local names, and GPNUMs. The researcher started the identification process using the County Auditor's list of parcels categorized as churches, re-categorizing parcels owned by Christian fraternal organizations, secondary religious parcels, and other disqualified properties.

During this process, the researcher started identifying the secondary religious parcels, unrecognized by the County Auditors' categorizations. Although the County Assessor's 2013 tax exempt parcel list proved to be invaluable for identifying secondary religious parcels, the list frequently included outdated information. To compensate for the incompleteness and inconsistencies between data sources, the researcher also cross referenced each parcel with the County Assessor's online record database, and the County Recorder's online record database.

At the same time, the researcher categorized each parcel in ArcGIS. The study uses food assistance and religious categorizations. For religious categorizations, researcher labeled each primary religious parcel as 'church' and each secondary parcel as 'religious.' This distinction is meant to represent which properties were included in the lawn measurement level of the assessment, and to depict the extent of secondary religious parcels.

Food assistance locations had a spectrum of categories between meal site, food pantry, and religious organizations. Map B5 in the appendix offers an example of this categorization system, with 'church' used abbreviate religious organization. This method intends to highlight the difference between the number of religious organizations in the county and the number of advertised food pantries and soup kitchens. At the same time, it tries to convey the reliance on religious organizations in Linn County's emergency food civic structure.

Lawn Identification

For the next level of the assessment, the researcher traced the lawns for the primary parcels of the qualifying religious organizations in Linn County, IA using ArcGIS and the raster

2014 aerial base imagery. Maps B2, B3, and B4 depict examples of the researcher's process of rendering the lawns as polygon features, and examples of excluded features.

Although a significant amount of time was spent trying to decipher what features to include and trying to carefully trace around excluded features, the fact that the researcher rendered all the lawns by hand leaves a significant margin for human error. All areas that appeared to be mowed grass were included, with the exception of baseball diamonds and fenced off areas around playgrounds. In these instances, the researcher determined that the area should no longer be included as a lawn because it served a functional purpose.

Areas that resembled prairie restoration or tilled agricultural land were excluded. Although both restored prairie and agricultural land could be replaced with donation gardens, they were not included because they are not explicitly lawns. In this same line of thinking, areas that appeared to have raised beds were excluded. Even if those areas would theoretically contribute to the harvests, the imagery was often blurry, and the speculating over the use of a rectangular area that resembled a raised bed seemed unreliable.

In contrast, trees and landscaping were sometimes included if going around them seemed like it would have a more significant influence than including them. There were many examples of individual trees that were surrounded by lawn, but had dense branches that made it impossible to view the terrain beneath the branches. In these instances, the tree was included in the lawn rendering because it could be inferred that lawn surrounded the tree's trunk. More obvious features that were excluded include: buildings, paved areas, parking lots, paths, walls, fences, small plots of grass that would be eliminated by the growing zone buffers (see below), playgrounds, dense tree cover, and other instances where the terrain below a feature is unclear.

The sum of all the lawn renderings represents all the potential growing space considered in the study.

Growing Zones

Although study assumes that qualifying religious organizations will use their entire lawns for donation gardens, but crops cannot cover the extent of the lawns. The gardens need to have foot paths and borders around the planting beds. To account for these, the researcher incorporated two levels of growing buffers: a 5-foot buffer and a 10-foot buffer using ArcGIS. Map B2 in the appendix provides a visual example of this process. This establishes a 5-foot and a 10-foot growing buffer to account for garden borders and foot paths. The acres that fall within these buffers are the growing zones. A 5-foot buffer leaves 336 acres for planting, and a 10-foot buffer leaves 293 acres for planting. The garden estimates are based on the assumption that all religious organizations will plant gardens on all these acres.

Crop and Yield Determination

For this study, the researcher had to identify a sample of crops with accessible yield rates for the Midwestern climate and with accessible grocery prices for Iowa. After consulting a variety of sources, the researcher selected a sample of fifteen specialty crops. The rates for these crops were found in the Iowa State Cooperative Extension's (ISCE) report, *Iowa Fruit and Vegetable Production Budgets*, and in the *Midwest Vegetable Guide (MVG)*. While the ISCE study tracked yield rates for three uncertified organic, small-scale farms in Iowa, the *MVG* based its predictions on data from more industrialized farming operations tracked by the USDA-National Agricultural

Statistics Service Vegetable Survey. Since the *MVG* offered estimates for average, good, and excellent yield rates. Although the yield rates in the *MVG* tended to be lower than the ISCE ones, this study uses *MVG*'s average yields for a conservative estimate. To take advantage of all available information, the study averaged yield rates for crops listed in both sources. Although these commercial yield rates are used in the assessment, in reality, the garden yields will probably be lower because they will likely be maintained by volunteers, which could reduce yields. The study measures these yield rates as tons/acre. The table on the next page lists the sample crops and each of their yield rates.

This study uses two measures to estimate garden yield: an overall estimate and a food pantry estimate. The overall estimate uses all the sample crops included in the study. It measures how much the gardens could produce if they were planted with equal amounts of each crop. The table below has a grey highlight over the crops for the second estimate. This estimate only includes crops well-suited for food pantry distribution, fruits and vegetables that travel well and are shelf-stable. This selection is inspired by the crops grown for the Iowa Food Bank's fresh produce programs. Once again, the estimate assumes that the gardens are planted with equal amounts of each crop.

Sample Crops

Crop	Yield[1] (per acre)	Grocery Price[i]	Value (per acre)
Asparagus	1.5 tons (2t, 1t)	$2.75/lb (2.50, 2.99)	$8,250
Cabbage	13 tons	$.63/lb	$20,540
Carrots	9 tons	.85/lb (.80, .89)	$15,300
Green Beans	4 tons (6.5t, 2t)	1.51/lb	$24,000
Eggplant	7 tons	1.40/lb	$19,600
Melons[2]	12.5 tons (15t, 10t)	.49/lb	$12,250
Onions	13 tons	1.29/lb	$33,540
Potatoes	8 tons (6.5t, 10t)	1.12/lb (1.25, .99)	$17,920
Raspberries[3]	3,000 qt. (3 tons)	8.00/qt	$48,000
Snow Peas	3 tons	3.50/lb	$21,000
Strawberries[v]	3,000 qt. (3 tons)	2.99/qt	$17,940
Summer Squash	10 tons	1.74/lb	$34,800
Sweet Potatoes	5.5 tons (4t, 7t)	1.09/lb (1.20,.99)	$11,990
Sweet Corn	4.5 tons	.62/lb	$5,580

[1] Yield data sourced from the Iowa State Extension (ISE) was rounded to tons/acre for consistency with the Midwest Vegetable Guide (MVG). Since the Iowa State Extension provided yield rates in lbs/400 ft, the estimates were multiplied by 109 (rounded up from 108.9) and then rounded to the nearest half ton. In instances where yield rates are available from both Iowa State Extension and Midwest Vegetable Guide, the yield projections represent the average between the two source estimates. The separate estimates are located immediately next to the averaged estimate. ISE estimates tended to exceed MVG estimates. Some crops, like green beans, showed a significant difference between the two estimates. These differences likely result from different scales of production and reporting.

[2] Melons yield is an average of watermelon (15 t/a) and cantaloupe (10 t/a).

[3] Since yield rates for raspberries and strawberries are only available in quarts, yield-by-weight had to be approximated for garden yield estimates. Using *Weights, Measures, and Conversion Factors for Agricultural Commodities and Their Products* from the USDA Economic Research Service, this study approximates their weight at 2 lb/quart.

Tomatoes[4]	14 tons (8t, 22t, 11t)	2.13/lb (2.25,1.75,2.39)	$59,640

The researcher considered using a third estimate based on federal nutritional guidelines. This measure would have had religious organizations plant their gardens according to the nutritional guidelines - 60% vegetables, 40% fruits, etc. The researcher omitted this method because it seemed to be an unrealistic way to assess planting and eating patterns.

The results are represented value- and weight-yields. The weight-yield describes how many tons of crops the gardens would produce per acre. The value-yield describes how much each acre of crops would be worth if the fruits and vegetables would be sold in a grocery store. The findings section represents these yield results as a range to incorporate a 10% margin of error. This margin of error attempts to account for errors in lawn tracing, issues in crop selection, and a number of other variables the study makes assumptions about up to this point.

Food Security Translation

The study translates yield into food security using both the value yield and the weight yields. The study uses two measures to compensate for and demonstrate the effect of crop selection. Since crops have such varied yield rates and grocery values, crops selection greatly influences this study's measure of impact. For example, the overall estimate has a higher value-impact than the food pantry estimate, but it has a lower weight-impact. This is because the crops

[4] Only fresh tomatoes are included in yield and value assessment. This is an average of cherry (8 ton), heirloom (22 ton), and generic fresh tomato (11 ton) yields. The price is generic.

in the food pantry estimate tend to above average yield rates and below average grocery values for the overall crop sample.

The study also uses both because neither the weight-yield nor the value-yield can adequately represent the program's potential impact on food insecurity. Using only a weight-yield would suggest that food insecurity is an issue of food scarcity – that people lack adequate access to food because not enough food exists. However, this is not the issue. It is widely documented that enough food exists, but that it is not being properly distributed. A calorie-yield would have similar issues. Although food insecurity is more of a financial issue, the value-yield is also too narrow. It places too much emphasis on a crop's grocery value, and could mistake that planting an acre of high-value crops like green beans would make a larger impact on food security than a low-value crop like potatoes. Improving access to food requires improving access to a variety of foods.

The study measures the value yield impact against the financing gap determined by Feeding America's *Map the Meal Gap.* Feeding America calculated that Linn County would need to increase funding by $12,613,000 to eliminate food insecurity in the county. Therefore, the study divides the total value-yield of the congregation gardens by $12,613,000 to calculate the percent of impact on food insecurity.

The study measures weight-yield impact using weekly market basket recommendations from the USDA's 2006 Thrifty Food Plan. Since Feeding America's Map the Meal Gap used consumption patterns for adult males between ages 19 and 50, this project uses market basket recommendations for the same demographic in order to improve comparability between weight and value results.

The USDA Thrifty Food Plan recommends adult males purchase 8.48 pounds of fruit per week, and 9.28 pounds of vegetables per week. The study only measures the impact of production on achieving the whole fruit part of the fruit market basket, and doesn't include the 1.83 pounds of fruit juice recommended per week. Similarly, the vegetable estimate leaves out the 1.87 pounds per week of recommended dried/canned legumes because no equivalent will be grown. The measure is based on a recommendation of 14.05 pounds of fruit and vegetables per week. Therefore, the weight impact is more a measure of meeting fresh produce needs than overall food insecurity. The study multiplies 14.05 by 26,030 (the number of food insecure residents in Linn County), then by 52 (weeks per year), and the product by 2000 to determine the tons per year of fresh produce that the food insecure residents are supposed to consume per year.

Although fresh produce alone will not fix food insecurity, this assessment could still be valuable. Fresh produce are expensive commodity items, so access to free produce could also enable families to purchase larger amounts of other food items. In this regard, increasing access to fresh produce could indirectly impact overall food security.

Survey Sample Population

The feasibility aspect of this study focuses on analyzing the results of a 20-question online survey distributed to the qualifying religious organizations in Linn County, Iowa. Of the target population, the study contacted a sample of 136 religious organizations. This sample only includes religious organizations with publicly accessible email addresses or online contact forms. Therefore, the sample is an intentional sample rather than a random sample, and the results

cannot be generalized for the entirety of Linn County religious organizations. Since the sample is intentional, the study does not assess its representativeness of the target population.

The sample organizations received two emails regarding the survey, sent approximately a month apart between November 2015 and December 2015. These emails can be found in Appendix C. 39.2% of contacted institutions responded the survey, for a total of 53 responses. This sample size (n) varies across questions because only 1 of the 20 survey questions were required, so respondents could choose to skip questions they felt uncomfortable answering. The sample size also disregards 'don't know' responses.

Survey Design

The study administered the online survey through Qualtrics in order to minimize expense and time. The survey's introductory paragraph and a table of the survey questions are in Appendix D.

The survey started by asking the religious leaders whether their congregations had gardens. The researcher required this first question in order to more accurately gauge how many congregations already garden. The study also started with garden questions, rather than lawn questions to be transparent about the subject of the survey without influencing the honesty of the responses. The white spaces on the table in the appendix depict the survey's page breaks. Many questions had their own pages in order to decrease the influence of subsequent questions. Although a select few questions featured open-ended responses, most questions were close ended because the survey was more interested in gauging quantitative interest than qualitative interest.

All non-gardening and non-lawn questions intend to evaluate the influence of different factors on a congregation's interest in participation. Some additional questions inquire about the congregations' food assistance programs. These questions intended to determine whether involvement in food assistance programs would make congregations more likely to want to participate in donation gardening. The survey also asked leaders whether any members of their congregation experienced food insecurity to see whether knowledge of the problem would influence their rates of interest in the gardening program. Finally, the survey asked religious leaders their perspectives on whether food is a human right to determine if this influenced their interest. The researcher placed these influence questions later in the survey because they bear less influence on the study's results, and asked about food as a human right last because it could be considered controversial or could influence responses to more relevant questions.

Findings

The study found that the 199 religious organizations own 996 acres of land, and assessed 798 of these acres to identify 390 acres of lawn. A 5-foot buffer for planting bed borders and paths leaves 336 acres of land, and a 10-foot buffer leaves 293 acres. These acres could be transformed into gardens to grow fruit and vegetables for the community.

The results of this project suggest that congregations could grow enough food to close between 35% and 68% of the meal gap in Linn County, IA. This percent uses a value impact based on Feeding America's $12,613,000 funding gap and the calculated USDA Thrifty Food Plan fresh produce gap of 5,546 tons. The results suggest that replacing church lawns with gardens could produce 1,951 – 3,255 tons of food with a 10-foot growing zone buffer and 2,238 – 3,733 tons of food with a 5-foot growing zone buffer. The amounts to $5,5,12,912 to $7,527,961 worth of food with a 10-foot buffer, and $6,321,973 to $8,632,747 worth of food with a 5-foot buffer. Although these ranges only incorporate a 10% margin of error, they also account for the difference between the two estimates. Range results by estimate are located in the table below. Although Estimate 2 had much higher yield-by-weight per acre, it returned a much lower value-per-acre than Estimate 1. Since Estimate 2 tends to use more high-yield, low-value crops, this result shows how much crop sample can influence yield measures.

Weight and Value Yield Estimates for Congregation Donation Gardens				
	Overall Yield		Food Pantry Yield	
Measurement	Weight (tons)	Value	Weight (tons)	Value
Average Yield Per Acre	7.4	$23,357	10.1	$20,906
Total 5-Foot Buffer Yield	2,238-2,735	$7,063,157-$8,632,747	3,054-3,733	$6,321,973-$7,726,858
5-Foot Buffer Percent of Impact	40%-49%	56%-68%	55%- 67%	50%-61%
Total 10-Foot Buffer Yield	1,951-2,385	$6,159,240-$7,527,961	2,663-3,255	$5,512,912-$6,738,004
10-Foot Buffer Percent of Impact	35%-43%	49%-60%	48%-59%	44%-53%

This study also distributed an online survey to the spiritual leaders of religious organizations in Linn County, IA to gain insight into the project's feasibility. Since the project relies on the participation of religious groups, the survey was key in gauging their interest. The survey's questions can generally be divided into four types: Garden, Lawn, Food Security/Food Assistance, and Demographic. The only question that does not fit into these categories is the final one on the survey: Do you think food is a human right? 72% of respondents agreed or strongly agreed that food was a human right.

Do you think food is a human right? n=47		
Response	Percent	Count
Strongly Disagree	6%	3
Disagree	6%	3
Neutral	15%	7
Agree	23%	11
Strongly Agree	49%	23

The survey started with questions about Gardens. The first question asked: Does your congregation currently have a garden? The response to this question led respondents down two different series of questions.

Forty percent of surveyed religious leaders responded that their congregation currently had a garden. Of these respondents, 80% considered their gardens successful or very successful, and 60% reported that they would be interested or very interested in expanding their gardens. 94% of respondents reported that the gardens were run by volunteers from their congregations. Ninety percent of the gardens grew vegetables, but only 15% grew fruit. All of the congregation gardens that grew produce donated them in one manner or another, either distributing them to food pantries or amongst congregation members. One respondent indicated that the congregation used the produce in its own food pantry. Seven of the nineteen congregations (37%) that reported donating their harvests, also reported having food pantries or soup kitchens. However, it is difficult to determine whether all congregations with gardens and food pantries used the harvests in house because congregations filled in their own responses.

Does your congregation currently have a garden? n=52	
Yes	40%
No	60%

How successful do you consider your garden? n=21	
Not successful	0%
Little success	5%
Neutral	15%
Successful	45%
Very successful	35%

How interested do you think your congregation would be in starting a garden? n=29	
No interest	21%
Little interest	21%
Neutral	38%
Interested	14%
Very interested	7%

Who maintains the garden? n=18	
Youth group members	11%
Hired staff	6%
Volunteers	94%
Other	22%

Is there a reason you don't have a garden? n=24	
Yes	63%
No	38%

What do you grow in your garden? n=20	
Flowers	30%
Vegetables	90%
Fruit	15%
Herbs	20%
Other	5%

What do you do with the products of your garden? n=18	
Donate	100%
Educate	6%

How interested would you be in expanding your garden? n=20	
No interest	10%
Little interest	10%
Neutral	20%
Interested	45%
Very interested	15%

Only 21% of congregations that didn't have gardens expressed interest in starting a garden. 63% of surveyed congregations without gardens, said they had reasons for not gardening. The five who elaborated most frequently reported lacking the room of the interest to maintain a garden. One respondent explained that the congregation had already tried having a garden, but had difficulty because their produce kept getting stolen.

Questions regarding lawns proceeded in a similar way, starting with the question: Is there a lawn on the congregation's property? 88% of congregations surveyed reported having lawns. 45% reported their lawns were over 5,000 sq. feet. Although only 34% reported being interested in planting a garden on their lawn, 3 out of 4 responded that they would be likely or very likely to provide the space for a garden if there were reliable volunteers to maintain it. This drastic difference suggests that congregations may consider volunteer access to be the biggest barrier to establishing and maintaining a garden.

Is there a lawn on the congregation's property? n=52					
Yes 88%					
How large is the lawn? n=31		How interested would you be in planting a garden on all or part of the lawn? n=42		If there were reliable volunteers to maintain the garden for you, how likely would you be to provide space? n=40	
<100 sq. feet	0%	Not interested	22%	Not at all likely	10%
101-500 sq. feet	10%	Little interest	14%	Unlikely	15%
501-1000 sq. feet	23%	Neutral	29%	Likely	30%
1001-2000 sq. feet	10%	Interested	31%	Very likely	45%
2000-5000 sq. feet	13%	Very interested	5%		
5000< sq. feet	45%				

While 63% of respondents reported knowing that members of their congregations experienced food insecurity, only one third of respondents reported that their congregations operated food pantries or soup kitchens. Congregations that operated a food pantry or a soup kitchen were also more likely to have gardens. Although there were not signification correlations between congregations with food pantries and congregations with gardens, 50% of congregations with a food pantry or a soup kitchen had a garden as opposed to 35% without a food assistance program. Overall, 23% of respondents operated both a garden and a food pantry. 59% of congregations reporting sharing meals, but 72% of these congregations also said it only occurred once a month or less.

Congregation Reponses Regarding Food Assistance	Yes	No
Do any members of your congregation experience food insecurity? (n=40)	63%	38%
Does your congregation run a food pantry or a soup kitchen? (n=50)	32%	68%
Does your congregation share meals? (n=49)	59%	41%

How often do you share meals? (n=29)			
Less than once a month	Once a month	2-3 times a month	Once a week
31%	41%	10%	17%

Demographic questions were intended to determine any patterns between location, congregation size, religion and other survey responses, but no definitive conclusions could be drawn. This report also cannot include the results of most demographic analysis because of the small sample size. Speculating about correlations between religious affiliation or location and survey responses would not only be unfounded, but would also jeopardize the anonymity of some respondents. For the results of the demographic questions, consult Appendix B.

Discussions and Conclusions

Although the results show that replacing church lawns with gardens would not eliminate food insecurity in the county, it would make a significant difference. In 1997, Linn County had 435 acres of vegetable production, whereas in 2012 it only had 272 acres of production (National Agricultural Statistics Service). If all the religious organizations in this study were to convert their lawns to vegetable gardens, it would more than double the number of acres devoted to vegetable production in Iowa. The project could make an impact, even if it only succeeds at the congregations that reported being interested in developing new gardens or expanding their current gardens. Twelve congregations reported being interested or very interested in expanding their current gardens, and another six reported being interested or very interested in starting new gardens.

Access to reliable volunteers seems to be a crux of success for a congregation lawn program. Therefore, volunteer coordination or hiring staff will be key. As the results showed, 94% of the operational congregation gardens relied on volunteers for maintenance. This idea is supported by the jump in interest when the survey asked congregations whether they would provide space for a garden if they had reliable volunteers.

Both the yield and feasibility aspects of this study are very limited, and only intend to offer a glimpse into the potential impact of a religious donation garden campaign. On a very fundamental level, inconsistent sources and remote research made it difficult to determine the current places of worship in Linn County, IA. Although the study cross-referenced sources and referenced satellite imagery, some places of worship may have been missed. The yield estimates do not consider factors like soil quality or ill-maintenance that could lead to fluctuations in yield.

The translation into food security impact also does not take into account food waste or theft, which are both significant issues that could prevent the garden produce from getting to the people experiencing food insecurity.

Although Map the Meal Gap is a very insightful study, using a price measure for the effects of vegetable production on food security seems problematic. Not only are vegetables generally more expensive, but measuring impact by value would encourage the planting of high-value crops rather than high-yield ones. Although this study found tomatoes to be the highest-value and highest-yield sample crop, tomatoes do not transport or keep as well as many high-yield, low-value crops. In contrast, raspberries were the second highest value-yielding crop, but they also had one of the lowest weight yields. The results of this study actually found that an increased weight-yield resulted in a decreased price-yield. Since these vegetables store well and are abundant, they generally cost less. However, their heartiness also makes them easier to stock for food pantries, and a more practical means for increasing vegetable consumption for low-income residents.

This study does not investigate issues of accessibility nor logistics of production. Although it estimates how much impact could be made if all religious organizations replaced their lawns with gardens, it does not attempt to apply survey responses to estimate how much of an impact such a program would feasibly have. It would be difficult to determine such an estimate because of the vastly different sizes of lawns. The participation of some religious organizations would make much larger impacts than the participation of others.

Future research on the impact of religious organization donation gardens on food security would want to find a better way to translate yield into food security. It would also want to

consider the reactions of food pantry clients to better determine the impact of having these fruits and vegetables readily available. It would be important to assess whether having access to fresh food at a food pantry would increase their feelings of food security, or whether it would have a measurable impact on their fruit and vegetable consumption rates.

The survey of religious organizations provided insight into the perspectives of religious leaders, but the results cannot be generalized for the state or even the county. Due to resource limitations, the survey was only provided to religious organizations with accessible email addresses. Although it is unclear how this requirement affected the sample, it would still be reductionist to generalize the results to Linn County's entire religious community. The survey included demographic questions like zip code, congregation size, and religious affiliation to attempt to determine whether the sample was representative, but inadequate, inconsistent data regarding these variables made this difficult to determine.

Self-selection could have also affected the representativeness of the survey sample. The results of self-selection could have been especially significant given the small size of the target population. Since the subject of the contact email to religious leaders read, "A Short Survey for a Study on Linn County Congregation Gardens," respondents who already had gardens or were interested in having gardens might be more likely to reply. This would make it appear as though a larger portion of Linn County congregations have gardens than do in reality. If an email contact method is used for surveying religious leaders in the future, results might be less biased with a more general subject.

Any future research on the perceptions of religious leaders on lawn donation gardens should consider another method of contacting religious leaders. Since most congregations listed

phone numbers, future researches could contact organizations over the phone to get a larger response rate and a more representative sample. Although the online survey appeared to be effective, verbal communication with religious leaders could also determine whether the online format acted as a deterrent to any potential respondents, a factor that could also affect sample representativeness, especially for such a small target population.

The accuracy of the survey responses could have been influenced by the number of closed-ended questions or the misinterpretation of question phrasing. Closed-ended questions could have forced respondents to choose between responses that inadequately represent their feelings. At the same time, other questions could have been leading. For example, the question "if there were reliable volunteers to maintain the garden for you, how likely would you be to provide space?" directs respondents to a positive affirmation, and they might feel inclined to respond positively given the survey's subject matter.

While this study offers promising evidence about the potential impact of starting a church lawn donation campaign, further research need to be conducted to determine how well food insecure residents can actually access the produce, and how it affects their feelings of food security. Further research into the successes and failures of religious organization gardens in Linn County, Iowa, and nationally would also be beneficial before the program's widespread implementation. This study did not look into the logistics of running such a program, such as funding or volunteer coordination, which would both be critical for its success.

Appendices

Appendix A: Demographic Result Tables

A1: Table of Congregation Size Demographics

How large is your congregation? n=47		
Response	Percent	Count
<50	11%	5
50-100	15%	7
101-200	21%	10
201-500	34%	16
500-1000	13%	6
>1,000	6%	3

A2: Table of Zip Code Demographics

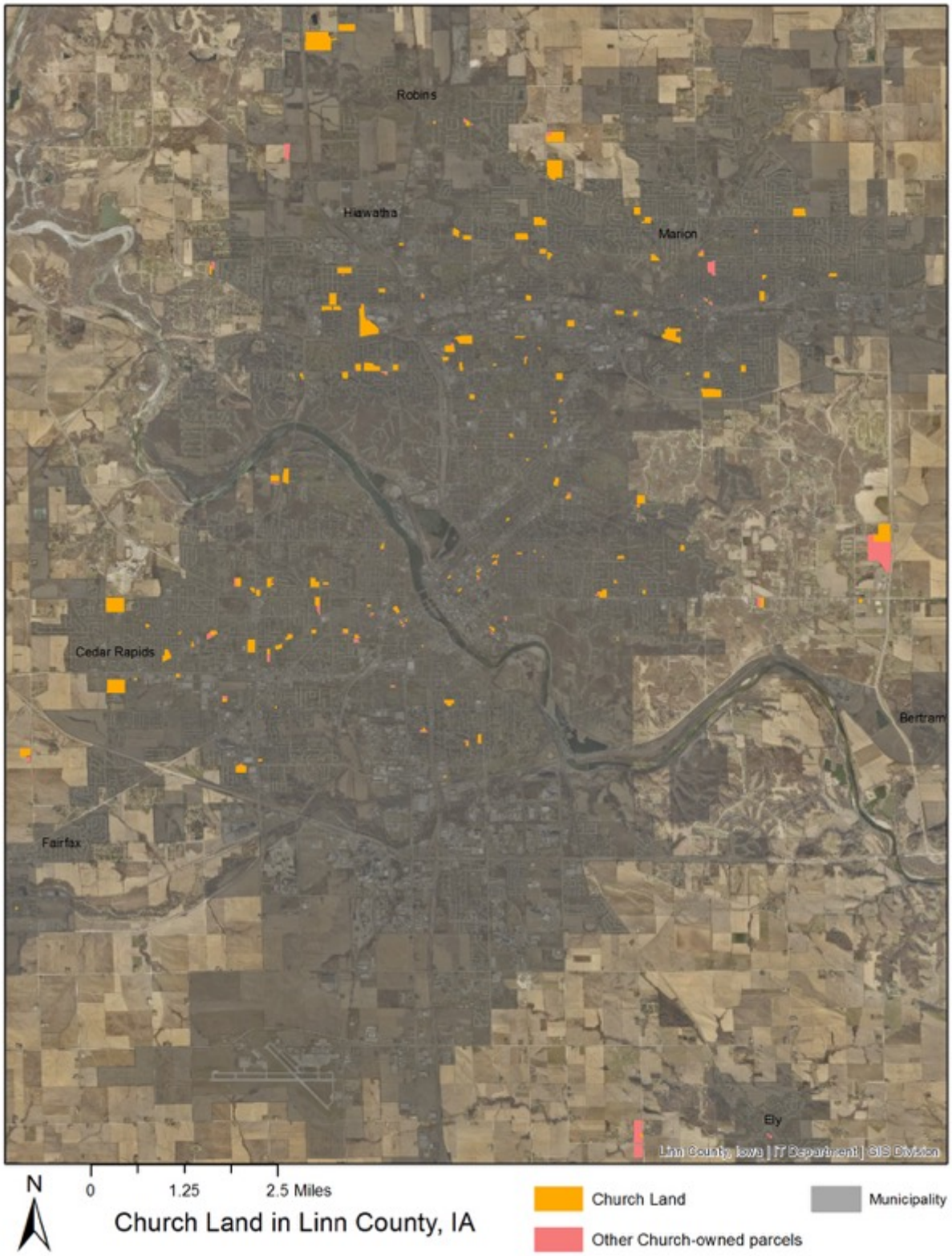
What is your zip code? n=46		
Response	Percent	Count
23405	2%	1
52214	2%	1
52218	2%	1
52227	4%	2
52233	2%	1
52253	2%	1
52302	13%	6
52314	4%	2
52330	2%	1
52401	2%	1
52402	26%	12
52403	22%	10
52404	4%	2
52405	11%	5

A3: Table of Religious Identification Demographics

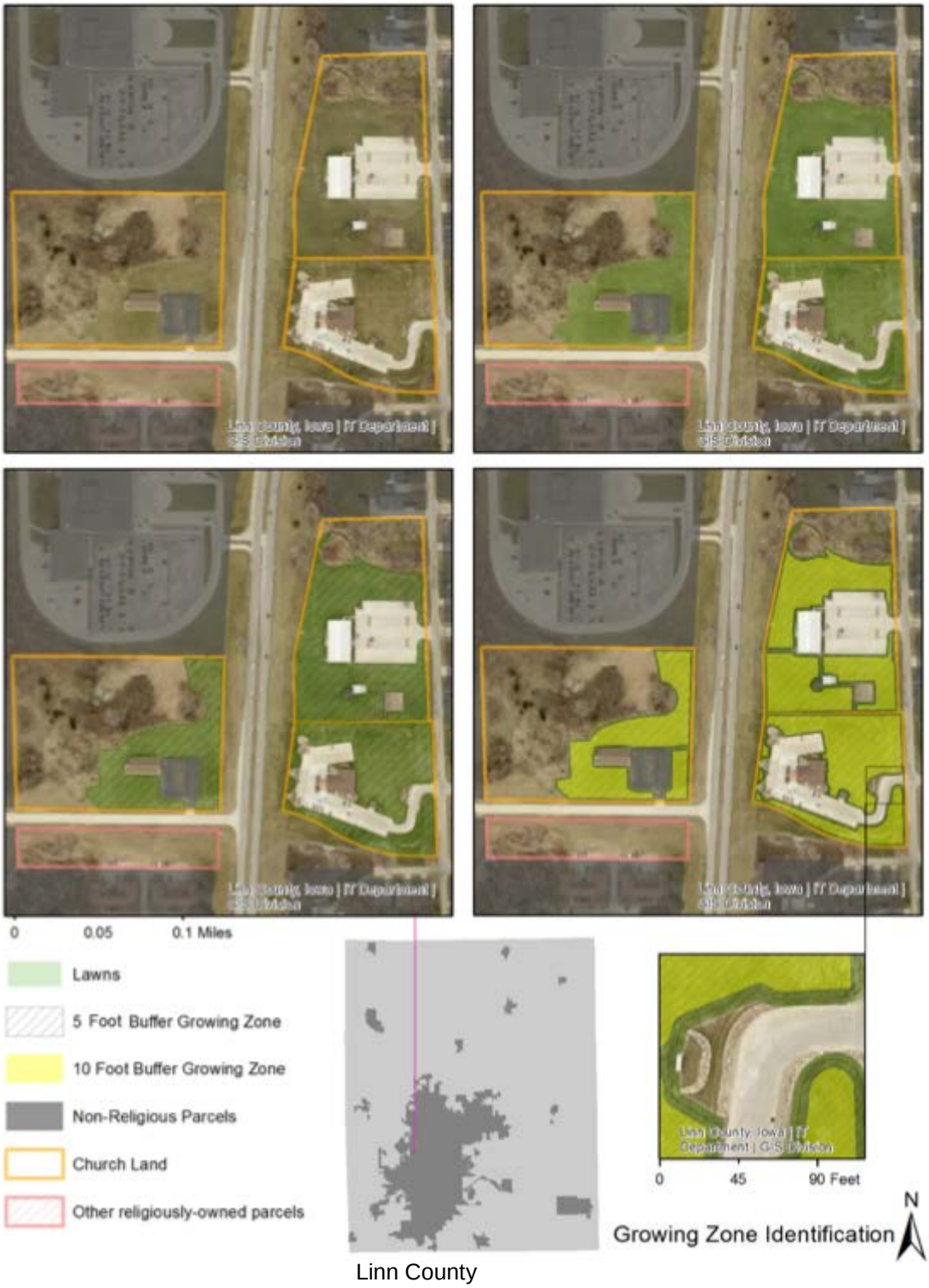
What religion does your congregation identify with? n=48	
Response	Count
American Baptist and Church of the Brethren	1
Baptist	4
Catholic	2
Christian	6
Christian – Positive Pray and Meditation	1
Christian (Evangelical Free Church of America)	1
Conservative Baptist	1
Episcopal	2
Evangelical Lutheran Church in America	4
Free Methodist	1
Islam	1
Judaism	1
Lutheran	4
Methodist	1
Nazarene	1
Open Bible Church	1
Presbyterian	3
Protestant-Presbyterian	1
Roman Catholic	2
Salvation Army	1
Unitarian Universalist	1
United Church of Christ	1
United Methodist	3
United Methodist and Disciples of Christ	1
Wesleyan	1

Appendix B: Maps

B1: Church Land in Linn County, IA



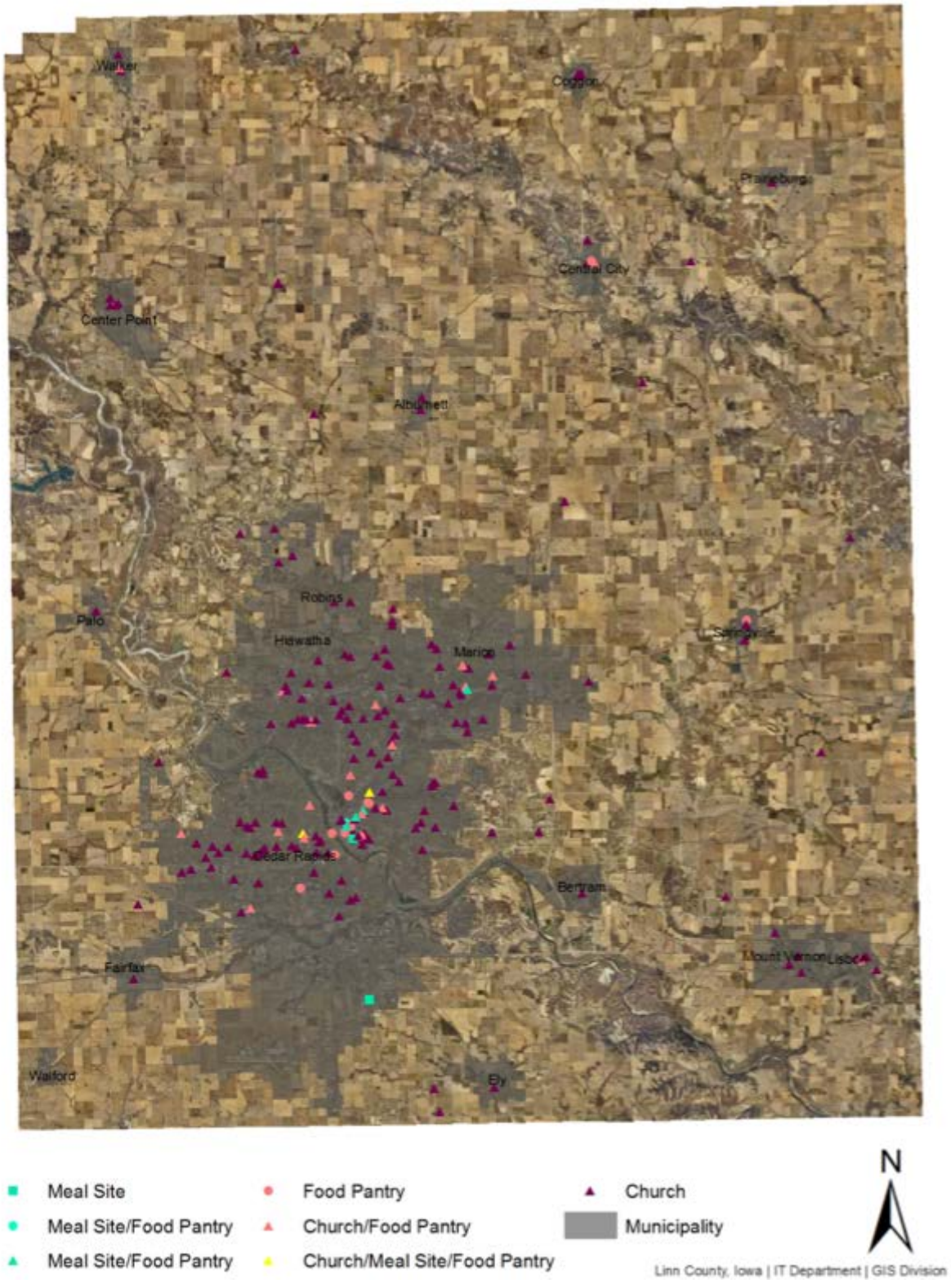
B2: Measured lawn for a church in Cedar Rapids of Linn County, IA with an insert of 5-foot and 10-foot growing zones



B3: Measuring Congregation Lawns: Tracing non-lawn features two

B4: Measuring Congregation Lawns: Tracing non-lawn features two

B5: Churches, Meal Sites, and Food Pantries



Appendix C: Survey Distribution

C1: Initial Email

Dear _____,

My name is Juliette, and I'm an undergraduate student at Syracuse University who served a term of AmeriCorps NCCC in Vinton, IA. I'm currently doing a study on church gardens and food security in Linn County that involves conducting a short survey for religious institutions like yours.

The survey should only take 10 minutes of your time and can be accessed online at this link: https://syracuseuniversity.qualtrics.com/SE/?SID=SV_3F8NVQJnSRZ1Mah. If you'd like to participate but would rather take the survey over the phone, I would also be more than happy to arrange a time to talk.

If you have any further questions, I can be contacted atjgcrelli@syr.edu. I would be thrilled to speak with you about the project and address any questions you may have.

Sincerely,
Juliette

C2: Follow-up Email

Dear _____,

My name is Juliette, and I'm following up on an email I sent you around Thanksgiving regarding a study I'm conducting about congregation gardens in Linn County. If you have already completed the survey, thank you so much, and please disregard this email!

If you have not had the chance to complete the survey, it will only take 10 minutes of your time and can be accessed online
through: https://syracuseuniversity.qualtrics.com/jfe/form/SV_3F8NVQJnSRZ1Mah.

If you have any further questions, please don't hesitate to contact me. Thank you for your time, I truly appreciate it, and I wish your congregation a joyful holiday season!

Sincerely,
Juliette

Appendix D: Survey Design

D1: Introduction

My name is Juliette, and I am an undergraduate student majoring in Policy Studies at Syracuse University. I am interested in learning more about church gardens and food security in Linn County, IA because I served a term with AmeriCorps NCCC in nearby Vinton.

I want you to invite you to participate in this research study, and since this is an invitation, please know that participation is completely voluntary. You will be asked to complete a survey either online or over the phone, which will take 10-20 minutes of your time. Although you should find the questions fairly basic, you are free to withdraw from participation at any time.

You should know that working with email or the internet can run the risk of comprising privacy, confidentiality, and/or anonymity. Your confidentiality will be maintained to the degree permitted by the technology being used. It is important for you to understand that no guarantees can be made regarding the interception of data sent via the internet by third parties. If you don't feel comfortable completing your survey online, but still want to participate, you can opt to complete it over the phone. You can arrange this by contacting me at jgcrelli@syr.edu.

If you have any questions, concerns or complaints about the research please contact Rick Welsh at jrwelsh@syr.edu.

I am 18 years of age or older, and by continuing I agree to participate in this research study.

D2: Survey Questions

Does your congregation currently have a garden?	
Yes	No
How successful do you consider your garden? Not successful Little success Neutral Successful Very successful Don't know Who maintains the garden? (check all the apply) Youth group members Hired staff Various volunteers from the congregation Other Don't know How large is the garden? (approximate) <100 sq. feet 101-500 sq. feet 501-1000 sq. feet 1001-2000 sq. feet 2000-5000 sq. feet Don't know What do you grow in your garden? (check all that apply) Flowers Vegetables Fruit Herbs Other Don't know What do you do with the products of your garden? (open-ended) How interested would you be in expanding your garden? No interest Little interest Neutral Interested Very interested Don't know	How interested do you think your congregation would be in starting a garden? No interest Little interest Neutral Interested Very interested Don't know Is there a reason you don't have a garden? (if yes, please explain) Yes (open-ended option) No Don't know

Does your congregation run a food pantry or a soup kitchen?
Yes
No
Don't know

Do any members of your congregation experience food insecurity?
Yes
No
Don't know

Does your congregation share meals?

Yes	No

How often do you share meals?
Less than once a month
Once a month
2-3 times a month
Once a week
2-3 times a week
Daily
Don't know

Is there a lawn on the congregation's property?

Yes	No

How large is the lawn?
(approximate)
<100 sq. feet
101-500 sq. feet
501-1000 sq. feet
1001-2000 sq. feet
2000-5000 sq. feet
5000< sq. feet
Don't know

How interested would you be in planting a garden on all or part of the lawn?
Not interested
Little interest
Neutral
Interested
Very interested
Don't know

If there were reliable volunteers to maintain the garden for you, how likely would you be to provide space?
Not at all likely
Unlikely
Neutral
Likely
Very Likely

What religion does your congregation identify with?
(open-ended)

How large is your congregation?
<50
50-100
101-200
201-500
501-1000
>1000

What is your zip code?
(open-ended)

Do you think food is a human right?
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

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